



Joint Typhoon Warning Center

Operational Outlook

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JTWC Ops Officer



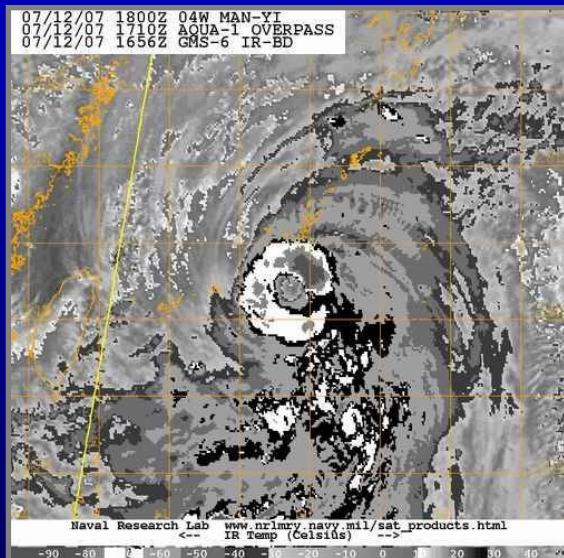
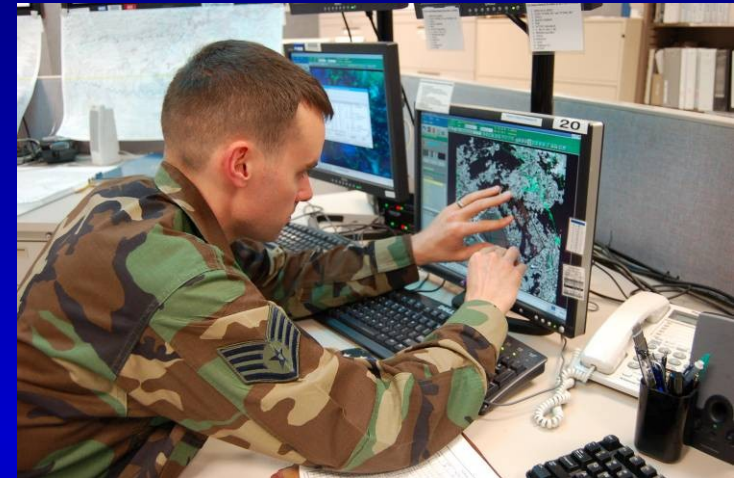
Overview

- JTWC Services
- Operational Challenges in 2008
- New in 2009
- Contact Information



Satellite Analysis

- Position Fix every 3 hours
 - VIS, IR, Multi-spectral
- Intensity Estimate every 6 hours
 - Dvorak Technique
- Code and Transmit Bulletin
- Process Other Agencies' Fixes
- Microwave Fixes as available



TPXS10 PGTW 061816

A. TROPICAL CYCLONE 26S (JADE)

B. 06/1730Z

C. 17.2S

D. 48.7E

E. FIVE/MET7

F. N/A

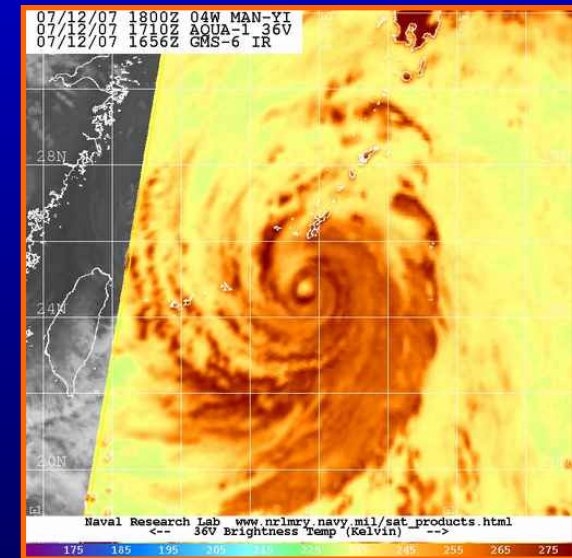
G. IR/EIR

H. REMARKS: 38A/PBO SBC/ANMTN. DVORAK VALUES UNAVAILABLE DUE TO LLCC OVER LAND.

I. ADDITIONAL POSITIONS:

06/1324Z	16.4S	49.4E	AMSU
06/1404Z	16.8S	49.7E	SSMS
06/1500Z	16.7S	49.5E	SSMI

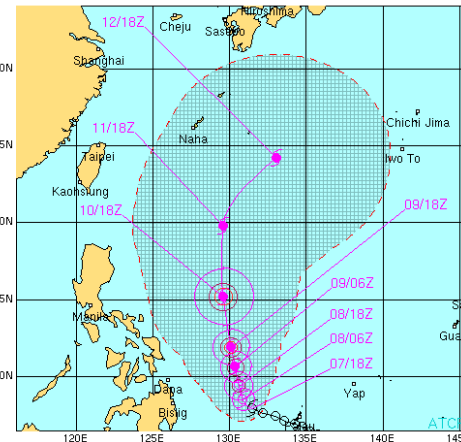
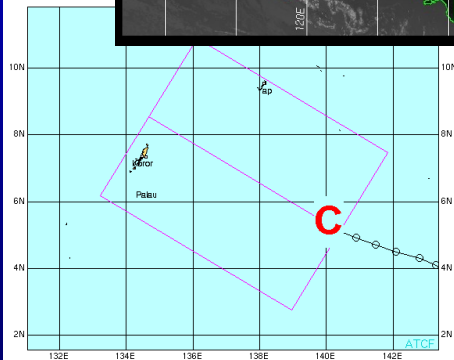
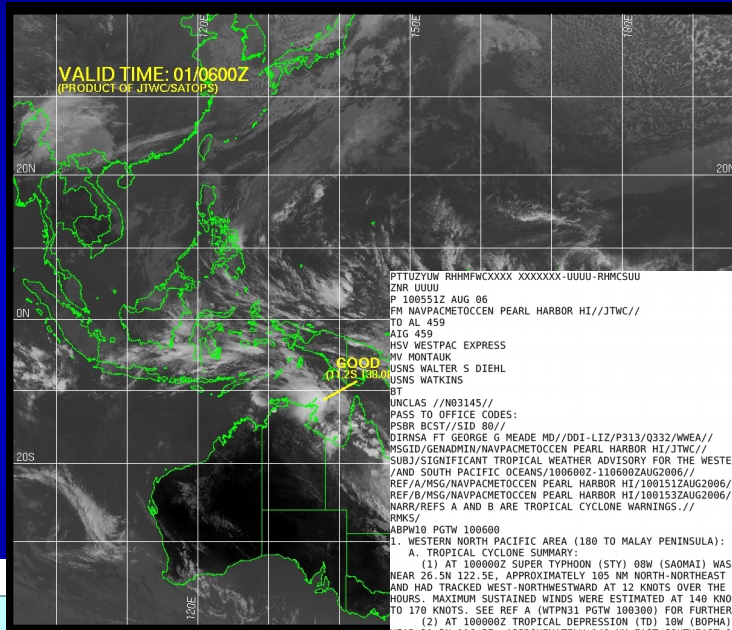
UEHARA





JTWC Services

Warnings/TCFA/Bulletins/Prog Reasoning



TROPICAL STORM 08W (SAOMAI) WARNING #3
071000Z POSIT: NEAR 7.5N 131.5E
NOTING 235 DEGREES TRUE AT 08 KNOTS
MAXIMUM SIGNIFICANT WAVE HEIGHT: 12 FEET
07/10Z, WINDS 035 KTS, GUSTS TO 045 KTS
08/06Z, WINDS 045 KTS, GUSTS TO 055 KTS
08/10Z, WINDS 055 KTS, GUSTS TO 070 KTS
08/08Z, WINDS 065 KTS, GUSTS TO 080 KTS
09/10Z, WINDS 075 KTS, GUSTS TO 090 KTS
10/10Z, WINDS 090 KTS, GUSTS TO 110 KTS
11/10Z, WINDS 090 KTS, GUSTS TO 110 KTS
12/10Z, WINDS 075 KTS, GUSTS TO 090 KTS

CPA TO:	NN	DTG
KADERA_AB	239	12/12Z

BEARING AND DISTANCE	DIR	DIST (NM)	TAV (HRS)
KOROR	299	258	54
	318	375	48

○ LESS THAN 34 KNOTS
● 34-63 KNOTS
● MORE THAN 63 KNOTS
● FAST 6 HOURLY CYCLONE POSITS IN BLACK
● FORECAST CYCLONE POSITS IN COLOR



Products Available on:

- <http://www.usno.navy.mil/JTWC>
- DMS
- JOTS
- JMV



JTWC Services

Significant Tropical Weather Advisory

- **Also known as ABIO/ABPW**
 - **Issued at 0600Z (ABPW) and 1800Z (ABIO)**
 - **Covers 24 Hour period**
 - **May be reissued as needed to reflect updates and development changes**
 - **Covers both Northern and Southern Hemispheres**
 - **Two sections each, Tropical Cyclones and Tropical Disturbances**



JTWC Services



Significant Tropical Weather Advisory (cont.)

- **Tropical Cyclone section will reflect most recent position at bulletin issue time (or reissue as appropriate) for each active Cyclone (warning status)**
- **Tropical Disturbance section**
 - **Tropical Disturbances discussed relative to development potential within next 24 hours (period of bulletin coverage)**
 - **3 Classifications Poor, Fair, Good**
 - **Poor - Development not expected during forecast period**
 - **Fair - Meteorological conditions increasingly favorable, but development not commenced**
 - **Good - Meteorological conditions are favorable AND development has commenced.**
 - » **TCFA will be issued on all 'Good' areas**



Tropical Cyclone Formation Alert

- Issued on all 'Good' Areas
- Valid for 24 Hours
- Reissued, upgraded to warning or cancelled

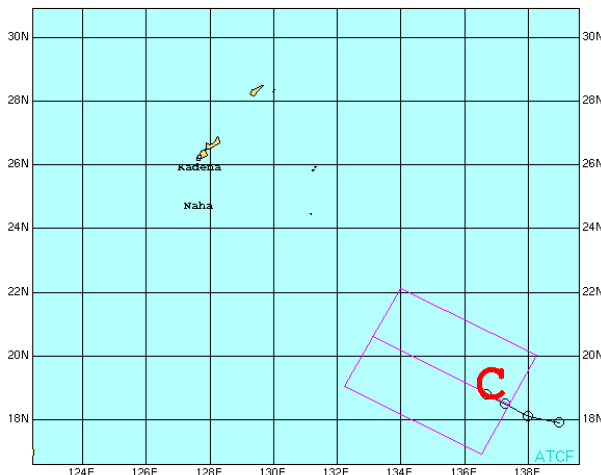
WTXS21 PGTW 081500

SUBJ/TROPICAL CYCLONE FORMATION ALERT//
RMKS/

1. FORMATION OF A SIGNIFICANT TROPICAL CYCLONE IS POSSIBLE WITHIN 160 NM EITHER SIDE OF A LINE FROM 13.25 70.9E TO 19.15 67.9E WITHIN THE NEXT 12 TO 24 HOURS. AVAILABLE DATA DOES NOT JUSTIFY ISSUANCE OF NUMBERED TROPICAL CYCLONE WARNINGS AT THIS TIME. WINDS IN THE AREA ARE ESTIMATED TO BE 25 TO 30 KNOTS. METSAT IMAGERY AT 081400Z INDICATES THAT A CIRCULATION CENTER IS LOCATED NEAR 14.05 70.2E. THE SYSTEM IS MOVING WEST-SOUTHWESTWARD AT 05 KNOTS.

2. REMARKS: THE AREA OF CONVECTION PREVIOUSLY LOCATED NEAR 13.45 69.2E IS NOW LOCATED NEAR 14.05 70.2E, APPROXIMATELY 420 NM SOUTH-SOUTHWEST OF DIEGO GARCIA. ANIMATED INFRARED SATELLITE IMAGERY AND A 081226Z SSMIS IMAGE CONTINUE TO DEPICT A RAPIDLY CONSOLIDATING LOW-LEVEL CIRCULATION CENTER (LLCC) WITH A DEFINED LLCC AND MULTIPLE BANDS OF DEEP CONVECTION WRAPPING INTO THE CENTER. PREVIOUS SHIP REPORTS AND SCATTEROMETER DATA SUPPORT A 25-30 KNOT SYSTEM WITH SLP NEAR 1002 MB. UPPER-LEVEL ANALYSIS INDICATES A GENERALLY FAVORABLE ENVIRONMENT, ALTHOUGH CURRENTLY HINDERED BY MODERATE TO HIGH VERTICAL WIND SHEAR (VWS), WITH GOOD RADIAL OUTFLOW AND WARM SST AND HIGH OCEAN HEAT CONTENT. THE LLCC IS EXPECTED TO TRACK INTO LOWER VWS WITHIN 12-24 HOURS AND SHOULD ALSO TAP INTO THE MIDLATITUDE WESTERLY FLOW TO ITS SOUTH, RESULTING IN IMPROVED POLEWARD OUTFLOW WHICH WILL ALLOW THE SYSTEM TO STRENGTHEN TO 35 KNOTS. MAXIMUM SUSTAINED SURFACE WINDS ARE ESTIMATED AT 25 TO 30 KNOTS. MINIMUM SEA LEVEL PRESSURE IS ESTIMATED TO BE NEAR 1002 MB. BASED ON THE IMPROVED ORGANIZATION, TIGHT BANDING, GOOD RADIAL OUTFLOW AND EXPECTED TRACK INTO AN IMPROVED ENVIRONMENT, THE POTENTIAL FOR THE DEVELOPMENT OF A SIGNIFICANT TROPICAL CYCLONE WITHIN THE NEXT 24 HOURS IS GOOD.

3. THIS ALERT WILL BE REISSUED, UPGRADED TO WARNING OR CANCELLED BY 091500Z.//



TROPICAL CYCLONE FORMATION ALERT
WTPN21 PGTW 050300
050000Z POSITION: NEAR 18.8N 136.7E
MOVING WEST-NORTHWESTWARD AT 06 KNO



ATCF



Warnings

- **JTWC issues warnings in Western North Pacific (West of Date Line)**
 - **Tropical systems reach 25 Knots closed circulation**
 - **Warnings are Issued to 120 Hours (5 days)**
 - **Text bulletins are posted to Navy Oceanography Portal, JAAWIN, GTS and via Message Traffic**
 - **Graphical products posted to NOP**



Warnings (cont)

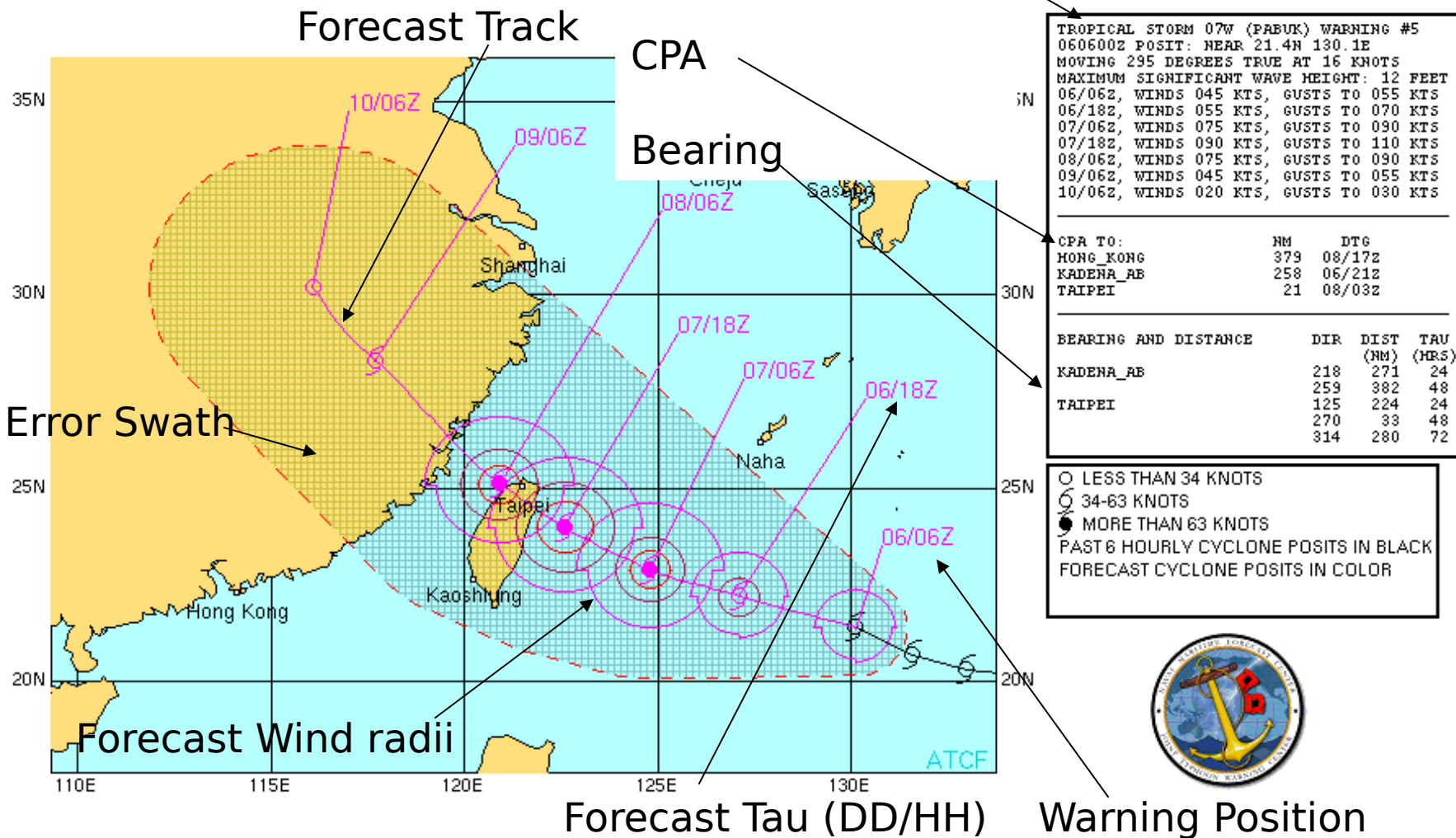
- **Warnings include forecast track, intensity and wind radii (through 72 hours)**
 - **Graphical products include error swath**
 - **Wind probability products produced as well**



Graphical Warning Product



Forecast Summary





Forecast Cycle

00-01Z: Import Fixes

Evaluate Observational Data

Create and Send Bogus

Best-track TCs and Suspect Areas

01-03Z: Evaluate Guidance (Models, etc.)

Develop Forecast (Track, Intensity, Structure)

Create Warning Products

Transmit Warning Products

03-04Z: Complete Administrative Tasks

Communicate with Customers

Import Fixes

Create 3-hr Position Update

04-05Z: Update Situational Awareness

Assess Suspect Areas

Create Advisories and Alerts

05-06Z: Evaluate new data

Re-Best TCs and Suspect Areas

Watch Team Discussion



Repeated 4 X per day



Warnings Special Services

3 Hour Updated Position

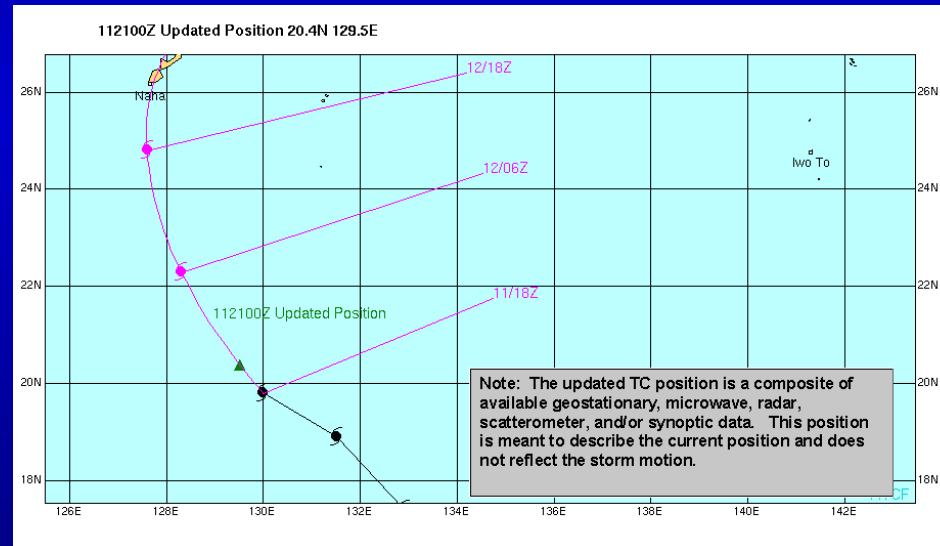


- **Updated Position (JTUP)**

- **Estimated Position issued when:**

- **Tropical Cyclone within 180 NM of:**

- **Cheju Island**
 - **Guam**
 - **Okinawa**
 - **Sasebo**
 - **Iwakuni**
 - **Yokosuka**



- **One of above sets TC Condition of Readiness (TCCOR) II or higher**
- **Requested by PACOM**



Warnings Special Services

Conference Call



- Conference Calls
- Available to operational forecasters via dial-up at 2130Z when the JTWC 72-hr 35kt wind radii area falls on major DoD concentration areas.
- Discussion covers synoptic picture, storm analysis, forecast track, forecast intensity, track uncertainty, etc.
 - Discussion does not cover TC COR
- JTWC provides conference website
 - <https://pzal.nmci.navy.mil/Confcall/confcall.html>
- Participation is encouraged
 - DSN (315) 455-9934
 - COM (808) 655-9934
 - Host Code: 865656

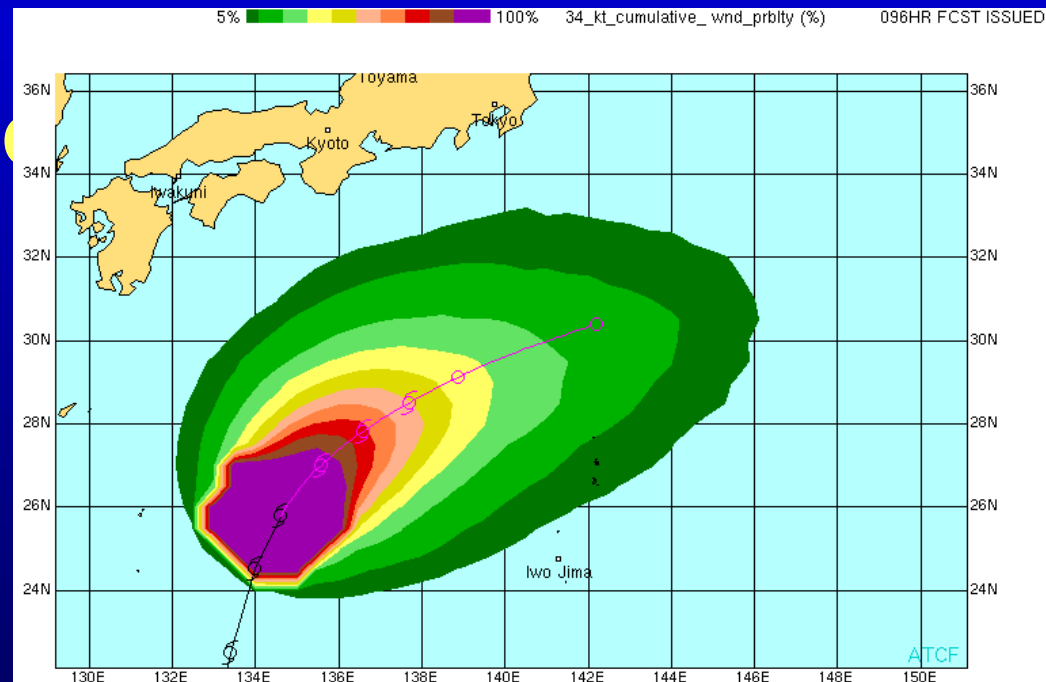


Warning Special Services

Wind Probabilities



- Provides indication of confidence in forecast
- Offered for Northwest Pacific only
- Password required



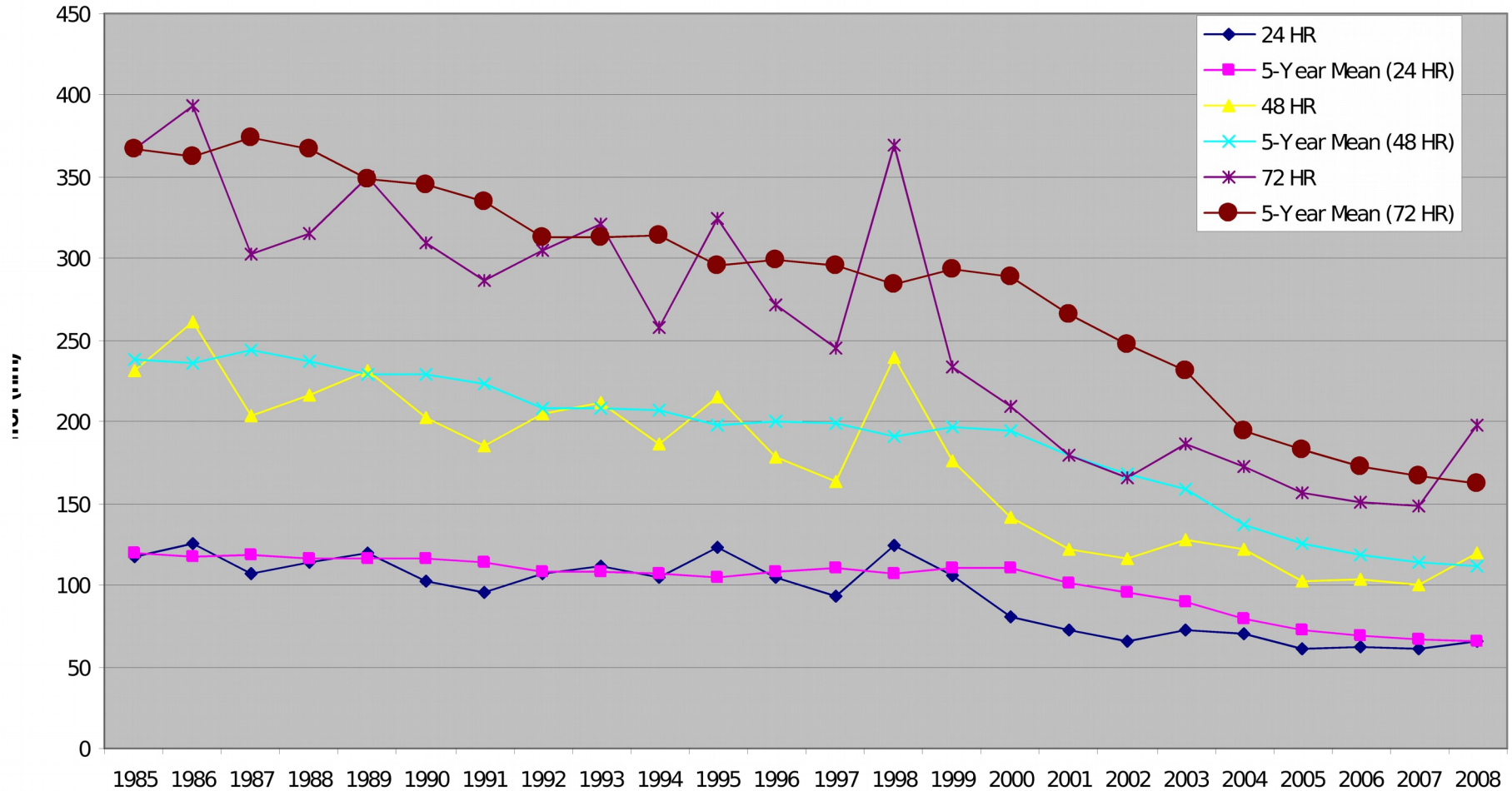


Operational Challenges

West Pacific Track Errors



WPAC 24, 48, 72-Hour Mean Error (nm)



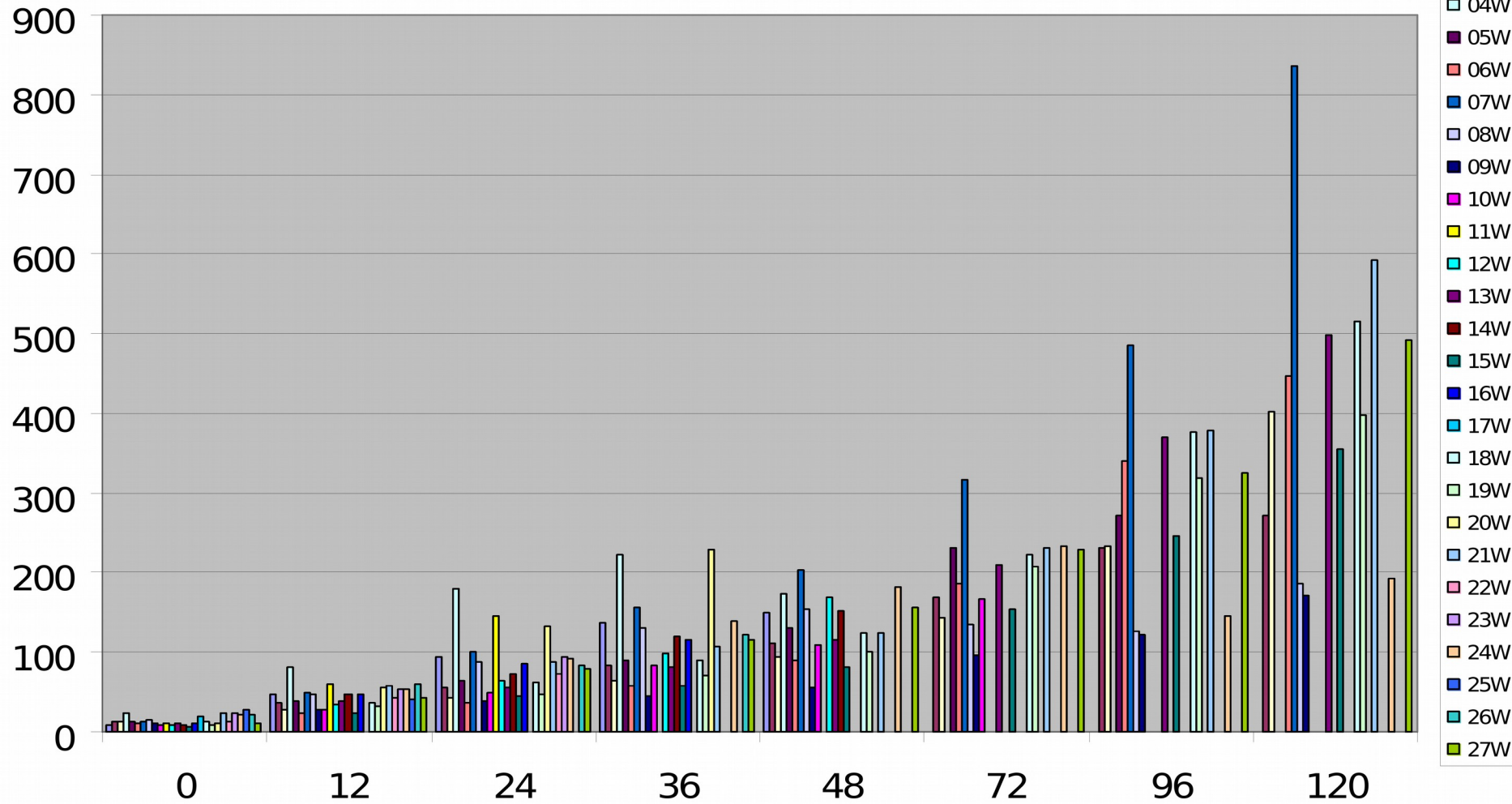


Operational Challenges

West Pacific Track Errors



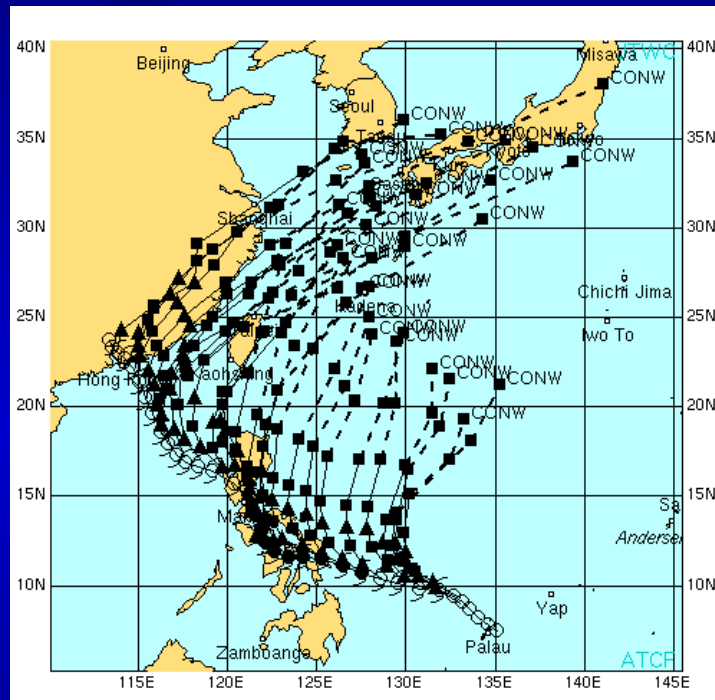
J TWC 2008 ERRORS PER STORM



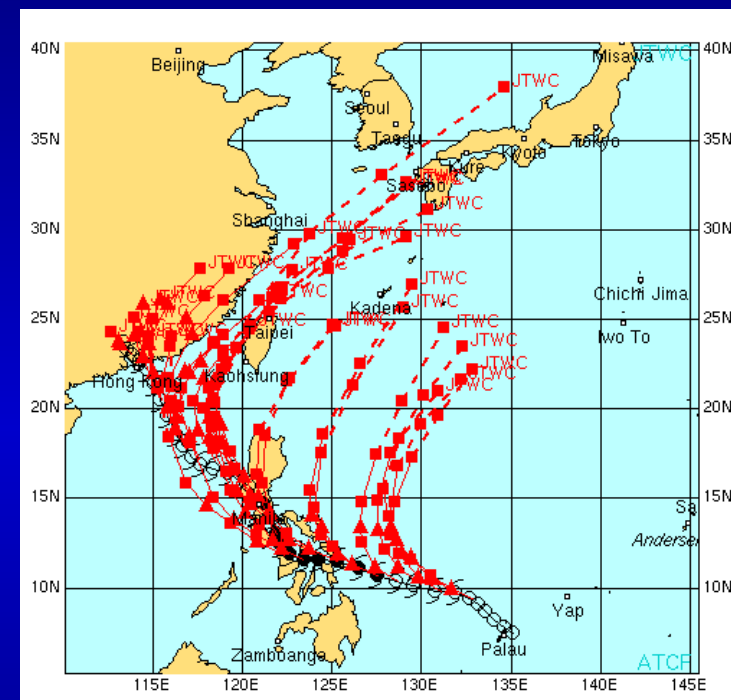


Operational Challenges

Numerical Weather Prediction



TY 07W Consensus



TY 07W Forecast Tracks

	24	36	48	72	96	120
JTWC	108	169	206	308	658	874
CONW	115	192	262	430	703	838
AVNI	124	205	276	512	780	1005
EGRI	105	141	158	228	471	589
GFNI	165	259	354	534	791	848
NGPI	125	214	319	541	770	934
#CASES	14	14	12	11	6	6



Operational Challenges

- **Frequent military TDO turnover.**
- **Interruptions to back office functions**
 - **Military Turnover and back office functionality interruptions should be mitigated by civilianization of Tech Dev and TDO positions**



JTOPS Contact Info

- If you have any questions or concerns, contact me at:

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(Subj: For JTOPS)